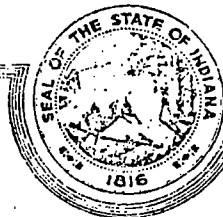


# STATE OF INDIANA



INDIANAPOLIS 46206

## STREAM POLLUTION CONTROL BOARD

1330 West Michigan Street  
633-5467

December 5, 1977

US EPA RECORDS CENTER REGION 5



522840

Mr. G. J. Behrens, Manager  
Technical Services  
U.S. Steel Corporation  
Gary Works  
1 North Broadway  
Gary, IN 46402

Dear Mr. Getty:

Re: Plans and Specifications for  
Blast Furnace Recycling Facilities  
U.S. Steel Corporation  
Gary Works, Gary, Indiana

The Indiana Stream Pollution Control Board at its regular meeting April 19, 1977, did consider the Construction Permit Application of U.S. Steel Corporation, Gary Works, to construct wastewater facilities. Dr. Walter Jackson and Mr. James Harrington represented the company before the Board.

On March 8, 1977, the Technical Secretary denied a Construction Permit Application submitted by the Company for a Blast Furnace Recycle System with an ultimate discharge through Outfall GW-5 into the Grand Calumet River. The Technical Secretary did deny the application because the predicted effluent limitations would not meet the Company's NPDES permit limits.

On April 7, 1977, the Company submitted additional information consisting of preliminary plans to further treat the blowdown of the Blast Furnace Recycle System by including an alkaline chlorination treatment system. The Board, after comments from the Company and the staff, did approve the Construction Permit for the Blast Furnace Recycle System.

The Company proposes to install facilities in or to provide recycling for approximately 40,000 gallons per day of blast furnace wastewater. Blast furnace wastewater is composed of stockhouse and ore yard drainage (0.9 MGD), boiler water treatment backwash (0.4 MGD), service water strainer backwash (0.6 MGD), 1 precipitator wastewater recycle system blowdown (1.1 MGD), and 4 precipitator effluent (6.4 MGD), and primary blast furnace gas (40.0 MGD). Both systems will consist of two existing settling lagoons, and a 12-cell induced draft type cooling tower with chemical feed facilities.

for treated water conditioning. Approximately 4.0 MGD of blowdown wastewater will continue to be discharged through Outfall 017 (GW-5).

It is also proposed to install clarification facilities at the No. 1 precipitator to recycle approximately 4.4 million gallons per day of wastewater. A blowdown of 1.1 million gallons per day as mentioned above will be directed to blast furnace recycle facilities.

At present the 40.0 million gallons per day of blast furnace gas cooling including wastewater receives primary treatment in three 864,000-gallon primary clarifiers prior to discharge to the existing settling basin. The sludge is mixed with hot dust and disposed of, which is inadequate. It is proposed to install new sludge dewatering facilities. The proposed facilities will consist of 3,800 gpm cycle separators, 150 gpm spiral classifier and a 275,000-gallon sludge thickener with a polymer feed system and two 340 ton per day vacuum drying filters.

This Permit is conditioned upon the following:

1. That the blast furnace recycle system be considered the first stage of treatment and that additional facilities be installed for removing ammonia, phenol, and cyanide, in order to meet the NPDES permit limitations. Plans and specifications for the additional treatment must be submitted to this office sixty days in advance of the start of the construction.
2. That the approvals are given as approving the technical feasibility of the wastewater treatment systems and, in no way, is the Board relieving the Company of its responsibility to comply with the NPDES permit limitations by July 1, 1977.
3. That the Company submit to the Board a plan of study to determine the impact on Lake Michigan and the Grand Calumet River from the discharge of chlorinated hydrocarbons from the proposed alkaline chlorination systems.
4. That the Company notify the Board of the date of completion of the proposed project.
5. That the Company obtain approval from the Solid Waste Management Section of the Indiana State Board of Health for the disposal of the sludge.

No material changes in the plans, construction or operation of this project shall be made without first submitting to this office the detailed statement of such proposed changes or additions and obtaining concurrence from this office.

Plans and specifications were prepared by the Company staff and submitted for review on February 3, 1977, with additional information submitted on March 5, 1977, and April 7, 1977.

You are further notified that this SPC-15 Construction Permit will expire without notice if construction is not begun before June 1, 1978.

Very truly yours,

*Oral H. Hert*

Oral H. Hert  
Technical Secretary and Director  
of Bureau of Engineering  
Indiana State Board of Health

Approval No. 1199

cc: Lake County Health Department  
Mr. Dick Cleaton  
Solid Waste Management Section